

## Appendix

### Affidavit Under 37 CFR 1.132

## IN THE UNITED STATES PATENT &amp; TRADEMARK OFFICE

In re the application of: )  
)  
JAMES R. MOCK, SR. ET AL. ) Group Art Unit: 3751  
)  
Serial No.: 10/091,634 ) Examiner: A. Kokabi  
)  
Filed: March 5, 2002 )  
)  
Title: METHOD OF DISPENSING )  
CYANURIC ACID )

## AFFIDAVIT UNDER 37 CFR 1.132

MS: AF  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

State of Minnesota )  
) S.S.  
County of Ramsey )

JAMES R. MOCK, SR., being first duly sworn, does hereby depose and state as follows:

1. That I am currently and have been employed by Ecolab Inc. for the past 29 ½ years, and I am currently and have been the Director of Aqua Balance (the pool and spa division) for the past 11 years. As the Director of Aqua Balance at Ecolab Inc., I am responsible for duties including product development, equipment design and specifications, vendors supplying component parts, the sales team, and technical services involving EPA, UL, CTA, and DOT regulations. I am also a member of Ecolab Inc.'s safety committee and a member on the Minnesota Board of Epidemiology.

2. That I have the following certifications:

Certified Pool Operator ("CPO") by National Swimming Pool Foundation ("NSPF")

Certified CPO Instructor by NSPF

National Spa Pool Institute ("NSPI") Tech I Certified for Commercial Pools

3. In addition, that I have completed 30+ continuing education credits by NSPI, all relating to commercial swimming pools and spas.

4. That I have read the subject patent application and understand the claimed invention, including the pending claims 2-5 and 7-22.

5. That in the pool industry, cyanuric acid is commonly used to stabilize a sanitizer such as chlorine in pools to increase the effectiveness of the sanitizer and to reduce the amount of sanitizer that must be used to maintain sanitary conditions in the pool. I am not aware of a dispenser for dispensing cyanuric acid into a pool. The conventional method of adding cyanuric acid to a commercial pool is to broadcast the cyanuric acid by hand across the surface of the pool. Cyanuric acid granules are relatively very slow to dissolve (usually approximately six to seven hours) and, when allowed to come in contact with the swimming pool plaster, cause staining to occur. Also, swimmers using the pool complain of the sharp feel of the granules under their feet if they step on the granules before they are dissolved. Therefore, cyanuric acid is typically broadcast across the surface of the pool during hours of little to no use, which are times when cyanuric acid is less effective in stabilizing the sanitizer.

6. Due to the inherent complications involved in adding cyanuric acid to a commercial pool, many operators forgo the use of this product. This causes the pool to be susceptible to times of low or no chlorine sanitizer level in the pool during times of direct sun and high bather load in the pool. This creates a huge risk to public health not to mention high consumption costs of chlorine-based products. Forms of chlorine such as sodium hypochlorite, calcium hypochlorite, and chlorine gas do not contain cyanuric acid. If a commercial pool operator were to use any of these forms of chlorine without

using cyanuric acid, the operator would use excessive amounts of chlorine in the pool due to degradation of the chlorine by the sun's ultraviolet rays along with consumption from bathers.

7. Because a chemical reaction will occur if chlorine and cyanuric acid are dispensed together in the same dispenser, these chemicals must be dispensed separately into the pool. Alternatively, dichloroisocyanurate or trichloroisocyanurate, which dissolve in water to form a solution of hypochlorous acid and the salt of cyanuric acid, may be used in lieu of using a separate sanitizer and stabilizer. However, when the hypochlorous acid is depleted in the pool the cyanuric acid byproduct remains even though more of the compound must be dispensed to effectively sanitize the pool. Over time, high levels of cyanuric acid reduce the effectiveness of the hypochlorous acid (the main killing form of chlorine) in the pool water, which is commonly referred to as "cyanuric acid block." Commercial swimming pool operators commonly find themselves confronted with an "unwanted buildup" of cyanuric acid in the pool. In addition, many local health department codes mandate that the levels of cyanuric acid in a commercial swimming pool shall not exceed 100 ppm. To maintain the desired level of sanitizer without exceeding the maximum level of cyanuric acid, frequent draining and re-filling of the pool water is often required, especially in high use pools.

8. There is a recognized, long-felt need to dispense cyanuric acid into a pool during daylight hours and/or periods of high use when stabilization of the sanitizer is most beneficial without interfering with the enjoyment of the bathers. Until now, this has not been able to be easily accomplished as every operator has been left to dispensing this product by broadcasting the cyanuric acid across the surface of the pool. Since the product is slow dissolving and should not be introduced into the pool while bathers are present, many operators were left with one of the following options:

- a. Closing the pool to manually add the product, which is generally impracticable.
- b. Adding the product when the pool is closed (typically at night), which is usually forgotten.

- c. Running the pool without cyanuric acid, which results in higher operation costs (adding extra sanitizer) and possibly placing the bathers' health at risk.

9. The feeder of the present invention allows for the dispensing of cyanuric acid at any time the operator desires, including during use of the pool, as the product generally does not leave the feeder in granular form. Except for some fine particles that may be dispensed through the mesh, the cyanuric acid is dissolved and in solution before it is dispensed from the feeder. Therefore, the cyanuric acid may be dispensed during times when it would most effectively stabilize the chlorine without closing the pool and/or interfering with the bathers' enjoyment of the pool. This feeder may be used in conjunction with all forms of non-stabilized chlorine thereby answering a recognized and persistent need that has not been solved by others.

10. Unlike U.S. Patents 3,772,193 to Nelli et al. and 4,181,702 to Watson, the feeder of the present invention dispenses cyanuric acid into the swimming pool, and the cyanuric acid is dispensed as a stand-alone system. In other words, the cyanuric acid is dispensed separately from the sanitizer thereby allowing an operator to maintain separate levels of sanitizer and cyanuric acid. Therefore, the issue of "cyanuric acid block" is not a concern in the present invention as it would be if the chemical of Watson were used in the dispenser of Nelli et al. as suggested by the Examiner. The results of placing cyanuric acid into a dispenser are quite different than placing dichloroisocyanurate into a dispenser.

11. It would not be obvious to one skilled in the art to combine Nelli et al. and Watson to create the present invention. First, cyanuric acid, sodium/calcium hypochlorite (chlorine), and dichloroisocyanurate are different compounds even though the latter includes forms of the former two compounds. Although dichloroisocyanurate dissolves in water to form hypochlorous acid (a sanitizer) and cyanuric acid (a stabilizer), this compound is quite different from the compounds chlorine and cyanuric acid. If chlorine and cyanuric acid were combined, dichloroisocyanurate would not result but rather a

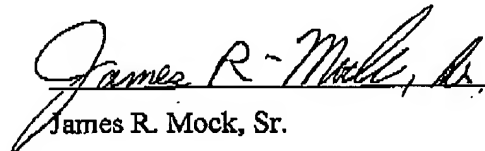
chemical reaction (an explosion) would occur. Therefore, dichloroisocyanurate is not an equivalent of chlorine and cyanuric acid as suggested by the Examiner.

12. Second, because it is known in the art that chemical reactions could occur when mixing different compounds, it is generally taboo in the pool industry to place compounds in dispensers for use with another compound. Further in this regard, NSF Certification is valid for specific chemicals in specific amounts only. To become certified, a product must undergo repeatability tests and material compatibility tests. If a different chemical and/or a different amount than certified is used, this would negate the NSF Certification. Because a chemical reaction could occur and because NSF Certification would be negated by mixing and/or swapping chemicals, one skilled in the art would not take a compound from one reference (Watson) and place it in a dispenser for another compound (Nelli et al.). In other words, it would not be obvious to one skilled in the art to place cyanuric acid in the type of dispenser disclosed in Nelli et al. Therefore, the present invention is not obvious to one skilled in the art.

13. In addition, even if Nelli et al. and Watson were combined, the combined references do not result in the present invention. Placing the compound of Watson, dichloroisocyanurate, in the dispenser of Nelli et al. would not result in the present invention. The present invention dispenses a desired amount of cyanuric acid into a swimming pool to stabilize the chlorine in the swimming pool. Again, cyanuric acid is dispensed in addition to chlorine in an independent dispenser, not within the same dispenser or in lieu of the chlorine dispenser. It is not simply placing cyanuric acid within an existing chlorine dispenser, and the permeable bag includes a mesh specific to cyanuric acid so that the desired amount of cyanuric acid is dispensed. It is important to dispense an appropriate amount of cyanuric acid into the swimming pool to stabilize the chlorine without "blocking" the chlorine, as would happen if the compound of Watson were placed in the dispenser of Nelli et al. Therefore, the present invention is not obvious in view of these references.

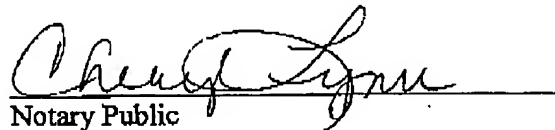
14. Ecolab Inc. has approximately 368 commercial outdoor pool accounts and has installed cyanuric acid feeders in each one of these outdoor pool accounts. Ecolab Inc. has received very positive feedback from its accounts on the cyanuric acid feeders. Such feedback includes comments that the feeders allow for dispensing cyanuric acid during hours of use when stabilizing chlorine is important thereby reducing the amount of sanitizer that must be used while maintaining sanitary conditions of the pools, allow for easy maintenance of proper cyanuric acid levels in the pools, allow for easy dispensing of the cyanuric acid, allow for easy filling and refilling of the cyanuric acid within the dispenser because the cyanuric acid does not need to be poured into the dispenser. No negative feedback has been received.

15. Therefore, as one who is skilled in the art with 11 years of experience in the pool industry, it is respectfully submitted that the cyanuric acid feeder of the present invention is not obvious to someone skilled in the art in view of the cited references.

  
James R. Mock, Sr.

On this 31 day of October, 2003, before me personally appeared James R. Mock, Sr. to me known and known to me to be the person described in and who executed the foregoing instrument, and he duly acknowledged to me that he executed the same for the uses and purposes therein set forth.

[SEAL]

  
Notary Public

